



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,501	03/16/2001	Giles Henry Rodway	RK590-US1	3959

7590

06/18/2003

Marguerite E Gerstner
Raychem Corporation
300 Constitution Drive
MS 120 6600
Menlo Park, CA 94025-1164

EXAMINER

KRUER, KEVIN R

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 06/18/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-6

Office Action Summary	Application No. 09/787,501	Applicant(s) RODWAY, GILES HENRY	
	Examiner Kevin R Kruer	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>5</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

The following action is supplemental to the Non-Final Office Action mailed October 4, 2002. The following action takes into account the preliminary amendment filed May 14, 2002. The examiner notes that Applicant has 30 days to respond to this Office Action. The shortened response time has been set in accordance with MPEP 710.06. All the rejection of the October 4, 2002 have been rendered moot in light of the new rejections

Claim Objections

1. Claims 1 and 2 are objected to because of the following informalities: line 4 of claim 1 states "of which polymer the or at least one constituent monomer..." Such language is idiomatic. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 9-11, 13, 15, 17-21, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO97/27260 (herein referred to as "Miyaki") in view of Vogdes et al (US 4,693,940). Miyaki teaches a fluorinated composition comprising (a) 100 parts by weight of a PVDF resin, (b) 5-100pbw of an acrylic and/or methacrylic polymer having functional groups, and (c) 10-200 pbw of a vinylidene fluoride copolymer (page 4, lines 16+). The acrylic and/or methacrylic polymer comprises acrylic ester copolymers comprising at least 50wt% acrylate and/or methacrylate (page 3, lines 14+). The composition may be utilized to bond fluorinated

Art Unit: 1773

resins, particularly PVDF and copolymers thereof to metals (page 5, line 20), and finds utility in fields such as electric wire coating (page 5, line 15). The layers may be coextruded (example 6).

Miyaki does not teach that the interlayer surfaces of the PVDF should be irradiated. However, Vogdes teaches a method of enhancing the bonding between incompatible polymers in a laminate structure by irradiating the laminate (col 1, lines 63+). The method results in part from chemical crosslinking across the interface between the layers. It is therefore essential that each of the polymeric compositions be radiation crosslinkable. Radiation crosslinking agents are preferably included in the composition to assist in making them radiation crosslinkable and to improve the strength of the bond between the layers (col 2, lines 36+). The crosslinkers are included in one or both compositions (see Tables A and B). The method should be done at such conditions to allow for at least a two-fold increase in the peel strength of the laminate (col 3, lines 41+). Specifically, heat treatment of the laminate should be carried out at a temperature higher than the melting point of at least one, and preferably all of the polymers in each of the compositions (col 3, lines 49+). The method is especially useful in for heat shrinkable tubes, especially for electrical insulation purposes (col 2, lines 51+). It would have been obvious to one of ordinary skill in the art to irradiate the laminate taught by Miyaki in order to improve interlayer adhesion.

With regards to the claimed bond strength and delamination limitations, Vogdes teaches that the amount of bonding is proportional to the conditions in heat treatment and irradiation steps (col 3, lines 41+) as well as the amount of crosslinker present (col 2, lines 42+). Thus, it would have been obvious to one of ordinary skill in the art to vary the radiation and heat

Art Unit: 1773

treatment steps as well as the amount of crosslinker present in order to control the adhesive strength of the resulting substrate to the adhesive taught in Miyaki.

With regards to the method limitations of claims 2, 5, 10, and 11, the examiner takes the position that the method of making a product does not patentably distinguish said product from a product taught in the prior art unless it can be shown that the method of making the product inherently results in a materially different product. In the present application, no such showing has been made.

3. Claims 6, 7, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO97/27260 (herein referred to as "Miyaki") in view of Vogdes et al (US 4,693,940), as applied to claims 1-5, 9-11, 13, 15, 17-21, 25, and 26 above, and further in view of Rossetti Jr. (US 3,864,228). Miyaki in view of Vogdes is relied upon as above. Neither reference teaches that the adhered PVDF polymer may comprise a copolymer of vinylidene fluoride and hexafluoropropylene. However, Rossetti teaches that copolymers of vinylidene fluoride and hexafluoropropylene provide cable and wire insulators that have improved heat aging and electrical insulation (abstract). Thus, it would have been obvious to one of ordinary skill in the art to utilize compositions comprising said copolymers as the PVDF polymer taught in Miyaki because said copolymers have improved heat aging and electrical insulation.

4. Claims 8 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO97/27260 (herein referred to as "Miyaki") in view of Vogdes et al (US 4,693,940), as applied to claims 1-5, 9-11, 13, 15, 17-21, 25, and 26 above, and further in view of Suzuki et al (US 4,454,249). Miyaki in view of Vogdes is relied upon as above, but does not teach that the adhesive layer can further comprise polyethylene. However, Suzuki teaches that polyethylene

Art Unit: 1773

porous resin fragments can be incorporated into polytetrafluoroethylene resin (col 1, lines 40+) in order to improve tensile strength, dimensional stability, and flexibility. (col 4, lines 1+). Thus, it would have been obvious to add polyethylene porous resin fragments to the PTFE adhesive composition taught in Miyaki in order to improve its tensile strength, dimensional stability, and flexibility.

5. Claims 12 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO97/27260 (herein referred to as "Miyaki") in view of Vogdes et al (US 4,693,940), as applied to claims 1-5, 9-11, 13, 15, 17-21, 25, and 26 above, and further in view of Bilow (US 3,632,441). Miyaki in view of Vogdes is relied upon as above, but does not teach that alternating layers of said adhesive and insulator may be stacked upon one another. However, Bilow teaches that alternating layers of wiring adhesive and insulation may be stack on one another in order to build an insulation with the desired thickness (col 3, lines 39+). Thus, it would have been obvious to alternate layers of adhesive and PTFE in order to obtain an insulation layer with the desired thickness.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO97/27260 (herein referred to as "Miyaki") in view of Vogdes et al (US 4,693,940), as applied to claims 1-5, 9-11, 13, 15, 17-21, 25, and 26 above, and further in view of Lagow et al (4,621,107). Miyaki in view of Vogdes is relied upon as above, but does not teach the use of trimethylolpropane methacrylate may be used as the crosslinking agent. However, Lagow teaches that trimethylolpropane methacrylate may be added to fluorinated polymers that are to be crosslinked by radiation in order to increase the efficiency of the process (col 13, lines 57+). Thus, it would

Art Unit: 1773

have been obvious to one of ordinary skill in the art to add trimethylolpropane methacrylate to the PTFE layers taught in Miyaki in order to increase the efficiency of the crosslinking process.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO97/27260 (herein referred to as "Miyaki") in view of Vogdes et al (US 4,693,940), as applied to claims 1-5, 9-11, 13, 15, 17-21, 25, and 26 above, and further in view of Dola (US 4,606,595). Miyaki in view of Vogdes is relied upon as above, but does not teach that the PTFE should be transparent. However, Dola teaches that wiring is preferably insulated with a transparent insulator in order to allow the conductors to be visually inspected when the termination is effected and to conceal the wiring by allowing the color of the underlying surface to show through (col 4, lines 9+). Therefore, it would have been obvious to one of ordinary skill in the art to utilize a clear PTFE in order to allow the conductors to be visually inspected when the termination is effected and to conceal the wiring by allowing the color of the underlying surface to show through.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 703-305-0025. The examiner can normally be reached on Monday-Friday from 7:00a.m. to 4:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is 703-305-5408.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

KRK
KRK


Paul Thibodeau
Supervisory Patent Examiner
Technical Center 1700